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ABSTRACT

The relationship between community college transfer students' experiences at an urban, doctoral-granting commuter university and their enrollment intentions was studied using Bean and Metzner's conceptual model of attrition for nontraditional students. Of 300 community college transfer students at a state-supported urban university who were contacted, 100 completed surveys. The students all aspired to at least a bachelors degree, half were older than 23 years old, and 60% were enrolled part-time. The model proposes that dropout decisions are based on six factors: academics, background, intent to leave, psychological, academic success, and environmental. Path coefficients were estimated by least squares regression procedures. The findings supported proposed paths between: background and academic variables, background and environmental variables, academic variables and academic outcomes, environmental variables and academic outcomes, and academic outcomes and intent. The data provided no evidence linking environmental variables to psychological variables. Implications of the results are addressed. (SW)

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A CAUSAL ANALYSIS OF ATTRITION AT AN URBAN NON-RESIDENTIAL UNIVERSITY

Valerie J. Broughton

June 24, 1986

AIR FORUM

ORLANDO, FLORIDA

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for Management Research, Policy Analysis, and Planning

This paper was presented at the Twenty-Sixth Annual Forum of the Association for Institutional Research held at the Marriott Orlando World Center, Orlando, Florida, June 22-25, 1986. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

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INTRODUCTION

Interest in retention and persistence research has blossomed as a result of Tinto's model (Tinto, 1975). Thus far, the accumulated findings validate the model in general (Pascarella & Chapman, 1983; Pascarella & Terenzini, 1980; Terenzini & Pascarella, 1980; Tinto, 1982) and currently there is interest in testing the framework's usefulness in explaining enrollment patterns of various groups of students at various types of campuses (Tinto, 1982).

Investigations into factors related to persistence at urban non-residential university campuses provide evidence that social integration has less influence on student retention than it does on traditional residential campuses (Hall et al., 1985; Pascarella et al., 1983; Zaccaria & Creaser, 1971). A conceptual model of attrition for non-traditional students at non-residential campuses (Bean & Metzner, 1985) differs from Tinto's model by depending less on socialization variables and more on external environment variables as predictors of persistence. Since non-traditional students, or students on non-traditional campuses rarely experience social integration into the institution, the non-traditional student attrition model de-emphasized social and emphasized environmental constructs.

The purposes of this paper were to restate the Bean and Metzner model for those unfamiliar with its structure and to test the explanatory power of the model. This study investigated the

relationship between community college transfer students' experiences at an urban, doctoral granting commuter university in the midwest and their enrollment intentions.

The model employed for this investigation was developed carefully after consideration of both forces affecting the increase in non-traditional student enrollment, and a definition of a non-traditional student. The definition, although cumbersome, is comprehensive and permits further segmentation.

> A non-traditional student is older than 24, or does not live in a campus residence, or is a part-time student, or some combination of these three factors; is not greatly influenced by the social environment of the institution, and is chiefly concerned with the institution's academic offerings (especially courses, certification and degrees). (Bean & Metzner, 1985)

This definition acknowledges that many non-traditional students attend college for reasons other than obtaining a degree. The Bean and Metzner (1985) model was used for this study rather than the Tinto (1975) model because the student population investigated fit the definition of non-traditional students and this campus is not a residential campus. The typical student in this study was enrolled for 10 semester hours, and was 25 years old.

Understanding enrollment decisions of non-traditional students will contribute both theoretical and practical knowledge to the study and management of higher education. The demographic

changes in the U.S. population and the interest of universities in attracting non-traditional students to augment declining enrollments make such knowledge crucial.

We know that the interaction of traditional students with faculty and peers at the institutions they attend has a powerful influence on their persistence. Non-traditional students are less likely to experience significant integration (Chickering, 1974; Parsons & Platt, 1973) and thus it would seem are influenced by forces other than institutional involvement or socialization. Although non-traditional students do not mature as traditional college students do, important developmental and behavioral changes may also occur in adult, part-time or continuing education students. Also, the experiences of success and/or difficulty may produce identifiable personal and intellectual growth in non-traditional students, just as traditional experiences for traditional students result in achieving independence from parents, for example.

University faculty and administrators are aware of the demographic characteristics that separate traditional and non-traditional students. Investigations into relationships among persistence, academic success, experiential and background factors will provide university personnel with new insights into whether or not there are attitudinal, motivational or environmental differences between non-traditional and traditional students. If such differences do exist, policy and programmatic changes can result in a more positive university experience and

thus increase the chances of success for the burgeoning number of non-traditional students at American colleges and universities.

A sample (n = 300) of students at the university who indicated a community college as the institution they last attended, received a mailed survey during the Fall, 1984. The survey included questions about the ease or difficulty of transferring, the level of satisfaction with various aspects of both community college and university experiences, and various demographic items. The survey was part of a statewide study investigating community college transfer students' attitudes toward services, programs, and facilities at two-year and four-year institutions within the state.

Completed surveys were returned by 100 students, yielding a response rate of 33%. Data were analyzed at the institutional level to determine areas of strength as well as areas of concern described by transfer students and to investigate relationships among variables. Bean and Metzner's model served as a basis to determine the effect of environmental and academic integration on responses to: "If you were to start your college career over, how likely is it that you would attend the state university that you currently attend?"

MODEL

The conceptual model (Figure 1) presented by Bean and Metzner (1985) indicated that drop-out decisions are based on six factors: academics, background, intent to leave, psychological, academic success and environmental. Social integration remained

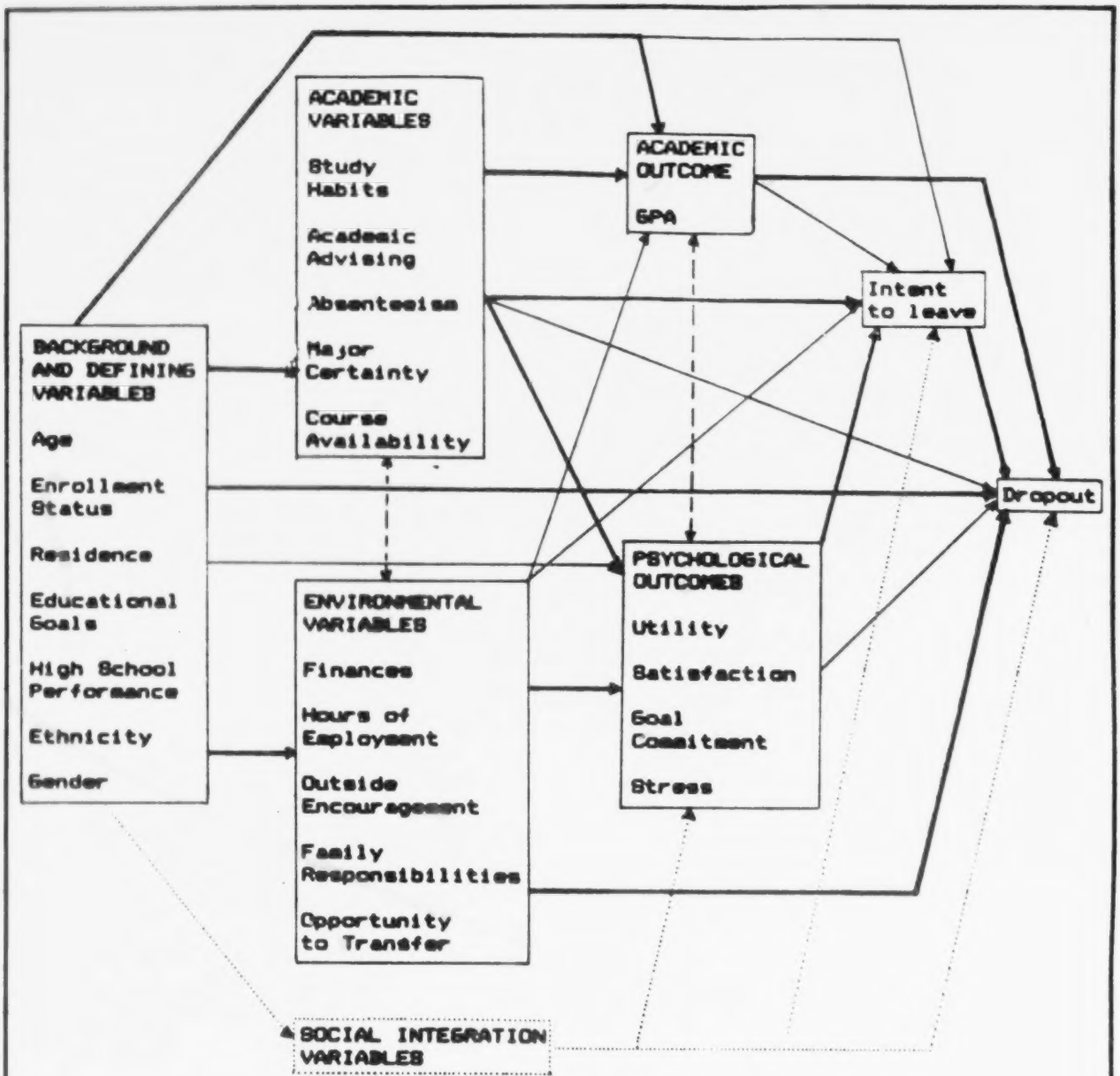

FIGURE 1. A Conceptual Model of Nontraditional Student Attrition.

Key: → Direct effects

→ Direct effects presumed most important

•-• Compensatory interaction effects

«···» Possible effects

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a possible effect but was de-emphasized compared to the similar model for traditional students. Results of seventy studies were synthesized to guide the development of this theoretical framework. Thus, each set of factors was explained and preliminary operational definitions were included.

Background Factor

The conceptual model proposed that background characteristics influence drop-out decisions both directly and indirectly through their effect on the other factors. Age, enrollment status, and residence were three demographic characteristics used to define non-traditional students. Older students were thought to have more family and work responsibilities than younger students and thus age would affect drop-out decisions. Part-time, and commuting students have similar academic experiences but spend less time participating in out-of-class campus activities than full-time residential students. The combination of greater family and work responsibilities and fewer social campus experiences seems to be related to persistence of non-traditional students. It was suggested that investigations employing this model control for residence by including only commuting students.

Four other background variables were included in the conceptual model: educational goals, high school academic performance, ethnicity and race. Education goals included degree aspiration, commitment to completing goal at present institution and importance of obtaining a college education. It

was assumed that student goals prior to enrollment would have direct effects on major certainty, opportunity to transfer, goal commitment and intent to leave, and thus have an indirect effect on the drop-out decision.

The discussion of educational goals included another important observation. Many non-traditional students enroll at the university with goals other then degree achievement. Enrollment decisions of students who aspire to take only selected courses, or enroll as non-degree seeking students should be studied separately.

Prior performance is an excellent predictor of future performance. Thus, high school performance is included as a background variable. It is expected to influence drop-out decisions indirectly through its effect on academic success at the university.

Ethnicity and sex were included in the model to account for the negative influence on attrition of poor educational preparation of minority students and the greater family responsibilities and place bound nature of women students.

The current study tested the effect of sex, educational goal, past performance, age, and enrollment status on the endogenous variable, intent to leave. Thus, the attempt was made to model intent to leave decisions rather than drop-out decisions. As the sample consisted of community college transfer students the community college grade point average replaced high school grade point as the measure of past performance. Also,

transfer students rarely elect to live in the university's small residence hall; thus, all students were assumed to be commuters.

Academic Factor

The second factor contained in attrition models for both traditional and non-traditional students was academic experiences. Five basic academic variables in the conceptual model were study habits, academic advising, absenteeism, major certainty and course availability. It is expected that students with good study skills will experience greater academic success and therefore are likely to persist at higher rates than students with poor study habits. Past results of investigations into the relationship of student evaluation of academic advising and persistence produced inconclusive results. Failure to attend classes reduces the opportunity for student interaction with peers and faculty and for academic success and this results in attrition. The fourth academic variable, major certainty is expected to have a positive effect on persistence. Courses offered and scheduled at convenient times are likely to have an impact on non-traditional student enrollment decisions, also.

Based on the conceptual model and data collected during the community college transfer study three academic variables are included in the current study. The study habit variable is the

standardized composite of student ratings of the difficulty students experience during their first semester at the university in:

1. keeping up with class assignments
2. not having necessary study skills
3. understanding lectures

The academic advising variable combined responses to the difficulty of getting good academic advising and the rating of satisfaction with academic advising at the university. Course availability was defined as the difficulty in getting the classes needed or wanted and the rating of convenient scheduling of classes at the university.

Environmental Variables

Bean and Metzner's (1985) non-traditional student attrition model includes an environmental factor. These variables, unalterable from the institutional point of view, are the unique features of this model compared to Tinto's (1975) traditional student attrition model.

> A perceived (or real) lack of finances, working for long hours, lacking encouragement, family responsibilities, and perceived opportunity to transfer are presumed to have direct effects on attrition decisions as well as indirect effects on drop-out through the psychological outcome variables (Bean & Metzner, 1985).

The current study investigated the effect of finances and family responsibility on the dependent variable, intent to leave. The finances variable consisted of the difficulty students had finding a job to help with expenses, paying for tuition, books and other educational expenses, arranging for financial aid, and

a rating of the availability of financial aid, and scholarships at the university. The family responsibility variable consisted of two items, the difficulty students had budgeting time for studies and social life and budgeting time for studies, work and family responsibility.

Academic Variables

Bean and Metzner (1985) summarized the importance of academic success as a predictor for traditional students and questioned its importance for non-traditional students. The current study used the current cumulative college grade point average at the university as the academic outcome measure. All students included in the analysis had completed at least one semester at the university.

Psychological Variables

In addition to academic outcomes, psychological outcomes such as stress, satisfaction, utility and goal commitment, were included in the conceptual framework. Utility refers to the practical and personal benefit students believe they are receiving as a result of their studies. The speculation is that the greater the perceived benefit, the more likely a student will persist. Satisfaction refers to "the degree to which a student enjoys the role of being a student and reports a lack of boredom with college courses" (Bean & Metzner, 1985). For part-time students, persistence was positively related to intellectual stimulation (Baumgart & Johnstone, 1977).

A third psychological outcomes is goal commitment, that is, how important a degree achievement is to a student, once the student has had some collegiate experience. This variable is similar to the background educational goal. Bean and Metzner (1985) reported conflicting finding about the relationships among pre- and post-matriculation goals and aspirations and persistence.

Stress is the last psychological variable identified in the proposed path model. The identified stress variable includes academic, work and personal problems. It was hypothesized that academic, environmental and background factors influence psychological outcomes which in turn affect drop-out decisions.

In the current study the stress variable consisted of the transfer problems related to

1. adjusting to large classes,
2. knowing who to go to for help,
3. locating necessary university services,
4. getting help with classes from teachers,
5. understanding assignments.

Goal commitment was measured as the highest degree a student hoped to attain. Satisfaction was defined as the rating on rigor of instruction at the university.

Intent to Leave

Intent to leave or drop-out at the end of the current term was the strongest predictor of actual attrition (Pascarella, et. al., 1983). The current study sought to explain a less obvious predictor of drop-out: the likelihood that students would enroll in this particular university if making

their enrollment decisions over. This more subtle measure of intent to leave incorporates student evaluation of academic experiences, personal accomplishment and fit between the university and the student's needs and expectations. Testing the predictability of this .pnl2 replacement for intent should add to our understanding of student satisfaction, regardless of whether they expect to drop-out at the end of the current semester, and thus assess causes of dissatisfaction. This understanding is crucial because although dissatisfaction may not always result in attrition, it can result in negative image. Dissatisfied students who nevertheless continue to enroll probably express negative attitudes toward the university in the community. Since community support and involvement are critical for non-residential universities committed to fulfilling urban missions, identification of the causes of student dissatisfaction, which may or may not lead to attrition, is imperative.

METHODS AND ANALYSIS

A sample of community college transfer students enrolled at a state supported urban university was surveyed during the Fall, 1984 semester. The students all aspired to at least a bachelors degree, half were older than 23 and 60 percent were enrolled part-time. It is assumed that all commuted, based on the fact that only 4% of all the students live in residence halls.

Survey data were analyzed according to the non-traditional student attrition model proposed by Bean and Metzner (1985). Path coefficients were calculated in order to evaluate the

original model. A slightly modified model was also tested. Results of both are included in the next section. Path coefficients were estimated by least squares regression procedures applied to standardized variables. Thus, standardized regression coefficients served as path coefficients (Asher, 1983).

RESULTS

Figure 2 indicates the significant links among endogenous and exogenous variables in the operational model.

The critical finding from this analysis is that students with higher university grade point averages were less likely to select this university if making their transfer decision today. This alarming result raises the question: Why does this negative relationship exist? The practical advantage of conducting this study around the conceptual model can now clearly be seen.

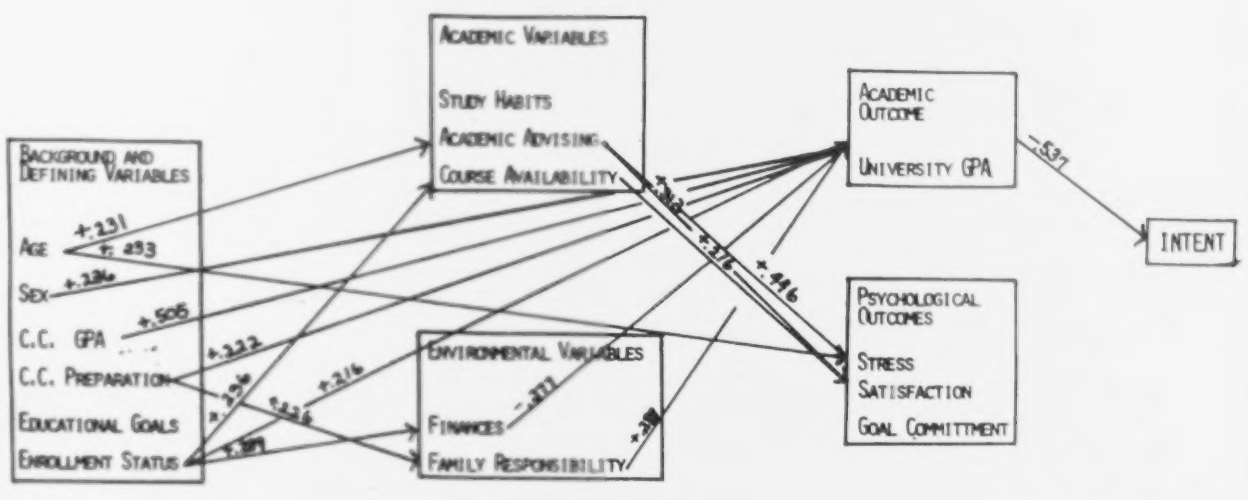

FIGURE 2. AN OPERATIONAL MODEL OF NON TRADITIONAL STUDENT ATTRITION

At the response level, evidence related to individual speculations is available. Regarding the idea that high achieving students who would not elect to continue their education here probably never wanted to come here in the first place, the lack of a significant path from the educational goals background variable to any other variable in the model makes that explanation very unlikely.

At the explanatory level, results indicate that enrollment status, a defining variable has an indirect effect on intent through grade point average. For community college transfer students, the more hours they attempted, the higher their grade point average and the less likely their intent to return. This finding may be related to the notion that community college transfer students often lack confidence in their chances for success at the university. However, once they transfer and experience success, they may gain confidence and realize they could have been successful elsewhere.

In general, the paths proving significant for the operational model in Figure 2 indicated that the academic outcome depended on environmental and background factors while psychological outcomes depended mostly on academic variables. Surprisingly, academic variables did not contribute to the academic outcome, and environmental variables did not contribute to psychological outcomes. Because the conceptual model did not include a path between psychological outcomes and the academic outcomes, academic variables did not even indirectly affect grade

point average. The weak explanatory power of this model led to a modification which tested a path between psychological and academic outcomes. The proposers of the theoretical model allowed for the possibility of the effect of psychological outcomes on the academic outcome (Bean & Metzner, 1985).

The results of testing the modified path diagram are shown in Figure 3. When the psychological variables were included in the regression equation predicting academic outcome, effects on grade point average of stress and two academic variables, advising quality, and course availability emerged. Also, educational goals contributed to intent through academic outcome. For the subset of non-traditional students at this urban campus, this revised model better explained grade point average and predicted indirect effects of academic variables on intent.

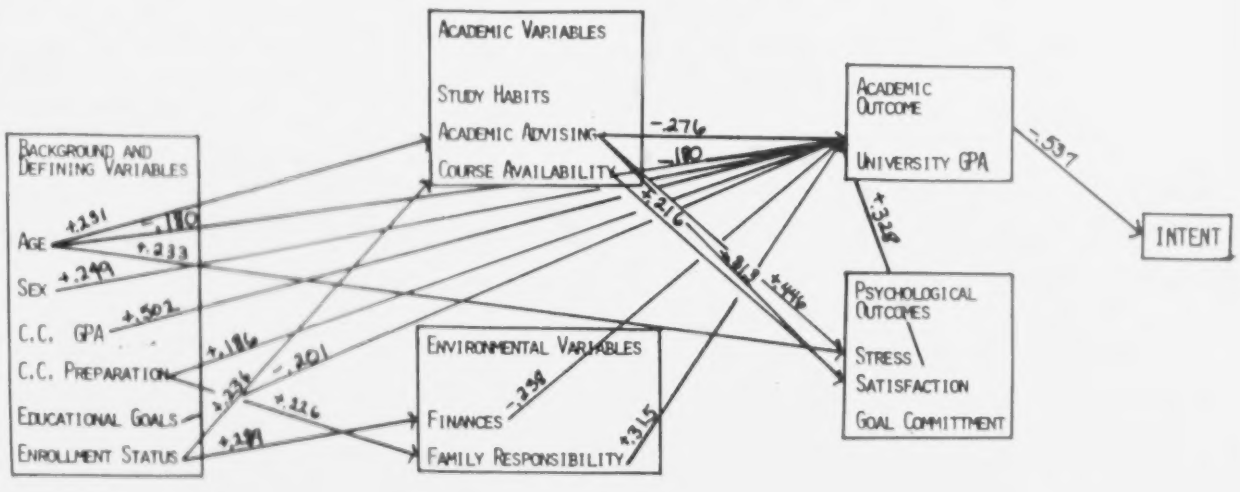

FIGURE 3. A MODIFIED OPERATIONAL MODEL OF NON TRADITIONAL STUDENT ATTRITION

The unexpected results were that students rating academic advising and course availability higher had lower grade point averages. Perhaps academically weaker students who needed academic advising were served better than stronger students. However, the measure of prior achievement, community college grade point average, did not explain variation in student evaluations of academic advising.

Students who attempted more hours were satisfied with course availability. When that positive factor was considered in the interpretation of the negative effect on grade point average, enrollment status had a very small effect on academic success.

Hours attempted also contributed to explaining variation in the financial environment measure. That is, students enrolled in more hours made a smooth transition from the community college to the university in terms of financing educational costs and also were satisfied with the availability of part time jobs and financial aid at the university. The indirect effect of enrollment status on academic achievement through finances is very small.

Analysis of the original operational model produced a direct effect of enrollment status on grade point average. When the effects of psychological variables were added to the analysis enrollment status contributed to academic success indirectly through finances and course availability and therefore had a negligible effect on intent.

Another characteristic of the revised model was the negative effect of educational goals on grade point average. Students for whom this university was the first choice institution earned lower grade point averages than students whose first choice was some other university. Thus, educational goals ended up with a positive indirect effect on intent. Perhaps students who wanted to attend a more traditional campus had a negative image of this urban university. Their perception may have grown more positive as they moved through the university. Of course, it is also possible that students who originally wanted to attend another school perceived themselves as having no other options, and realize they would probably attend here again if having to make their college choice again.

The indirect effect of stress on intent leads to similar speculations. Students who could cope successfully with the many demands on their time earned higher grade point averages. And students who had difficulty balancing many demands had lower grade point averages. When this relationship was considered in light on the negative relationship between academic outcome and intent, it was found that students who could balance their home and school activities would attend school somewhere else if they could. Students who had difficulty managing their activities would attend school here again, possibly because of family constraints; they may view their choices as limited.

SUMMARY AND CONCLUSIONS

The purpose of this study was to explore the enrollment decisions of community college transfer students at an urban, commuter institution using the Bean and Metzner's (1985) model of non-traditional undergraduate student attrition. The conceptual model was operationally defined so that available data could be used. Thus, the operational model included a subset of variables from the conceptual framework.

The area where specific omissions may have had an important impact in the overall interpretation of the results is the environmental section. One need for a model specifying factors related to attrition for non-traditional students rather than continuing to modify Tinto's for various subpopulations was to underscore the importance of environmental concerns of non-traditional students, and to minimize the importance of social integration. The environmental variables available for this analysis were finances and family responsibilities. They both had indirect effects on intent through academic outcome.

This study makes both theoretical and practical contributions. It provided a test of the non-traditional student attrition model and supported the proposed paths between background and academic variables, background and environmental variables, academic variables and academic outcomes, academic variables and psychological outcomes, environmental variables and academic outcomes, and academic outcomes and intent. The data provided no evidence linking environmental variables to

psychological variables. Perhaps a more comprehensive set of environmental variables would substantiate that relationship.

While the proposed model supposed that all sets of predictors would directly affect intent, this analysis suggested that academic outcome has the only direct effect on intent. All other sets had indirect effects mediated by academic outcome. These indirect effects were not supported on the original operational model, but the addition of psychological outcomes as predictors of academic success offered a more reasonable explanation of the relationships among variables predicting intent.

The development of the non-traditional attrition model was a valuable one and this study is one of what will prove to be many test of its explanatory power. These results suggest that the model has validity for explaining enrollment intent and suggests only that there may be a more direct relationships between psychological and academic outcomes than the conceptual model proposed.

The specific population of community college transfer students to an urban non-residential campus may have added idiosyncrasies to the model that would not have existed if drop-out decisions of a more general population were explored.

From a management perspective, the findings indicate that prior image of the university may not be improved through enrollment, that some students who would select this institution may do so only because they see no alternatives. The university

needs to concentrate on improving the experiences of place bound students so that they view the institution not as one of last resort, but as the institution of choice. Awareness of the importance of advising, course availability and environmental variables which could lead to the development of programs and information to students about these concerns are strategies to consider. The university can impact the academic variables and often cannot affect the environmental ones. Teaching strategies that consider environmental constraints on students could result in more positive experiences by students and thus improve student experiences and decrease attrition.

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